



Procedures and Guidelines

DIRECTIVE NO. 423-PG-5330.1.1A
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Title: REVIEW AND APPROVAL OF ECS TEST PROCEDURES

P1. PURPOSE

The purpose of this Procedure/Guideline is to document the process employed by the ESDIS Project to review and approve ECS Test Procedures and Test Schedules.

P2. REFERENCE

The following documents are either referenced in the body of the procedure or employ the subject procedure as a reference. Record forms that are applicable to the implementation of the procedure are also listed.

- a. 423-41-02, EOSDIS Core System (ECS) Functional and Performance Requirements Spec
- b. ICD's and IRD's
- c. ECS Test Plans
- d. ECS Test Procedures
- e. ECS Test procedure review forms (including completed sample artifacts)
- f. ECS Verification Database
- g. GPG 4520.2, Incoming Inspection and Test
- h. GPG 5100.1, Procurement
- i. GPG 5330.1, Product Processing, Inspection and Test

P3. SCOPE

The scope of this procedure is limited to the process for the review and approval of ECS test procedures, and the schedules used to plan execution of these tests.

P4. DEFINITIONS

None

P5. AUTHORITIES AND RESPONSIBILITIES

None

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P6. CANCELLATION

423-PG-5330.1.1 baseline version

P7. RECORDS

Quality Record Title	Record Custodian	Retention
ESDIS e-mail approval for final test procedures	ESDIS ECS Test Manager	NRRS 5/24 Dispose of in accordance with related contract.

P8. IMPLEMENTATION

The ESDIS process discussed in this procedure focuses on the review and approval of test procedures. This key ESDIS activity is part of the project's oversight and management responsibilities on the ECS Program. The reviews and approvals discussed herein are needed to ensure that the ECS contractor is operating a high quality test program which, if implemented correctly, will be comprised of accurate planning and quality documentation. Pursuant to achieving this desired high quality, the paragraphs below describe the processes followed for a thorough review and approval of procedures as delivered by the ECS contractor.

8.1 . *Test Procedure Review Process:*

8.1.1 *Participants (Who):*

The individuals involved in the test procedure review process include the following personnel:

- ESDIS ECS Test Manager
- ESDIS Test Manager staff and support contractors
- ESDIS SSDO System Engineer
- Deputy SSDO Manager
- Science Systems Development Office (SSDO) Development Leads
- SSDO support contractors
- Independent Verification and Validation (IV&V) contractor
- ECS Development Contractor (Raytheon Systems Co.)

These individuals work together as described below to carry out the review process.

8.1.2 *Process Description (What, How and When):*

Step 1: Assignment of responsibility.

Upon notification from Raytheon that ECS test procedures will be released for review, the ESDIS Test Manager, or SSDO System Engineer, subsequently tasks the team of reviewers to prepare for near-term review activity. The manager provides specific assignments such that each individual knows exactly what test procedure(s) they will be responsible to review and comment on. The list of ownership assignments is captured in an Excel spreadsheet, which is maintained by the ESDIS ECS Test Manager. Additionally, ESDIS in conjunction with the IVV contractor will establish the test procedure review priorities. The schedule for comment submission will be developed by ECS based on the test schedule, personnel/resource availability and other factors.

Note that each ECS test procedure has an ESDIS “owner” (typically a SSDO Development Lead) who will always be included in the review of any procedure he/she owns. This procedure review activity is only part of the procedure owner’s responsibility relative to the “owned” procedure. Procedure owners must also be the “champion” of quality for the procedure, from review and witnessing to reporting on any problems with related system functionality found by the procedure.

Step 2: Preparation for review.

The review team prepares for the review by engaging in any or all of the following activities:

- Review of previous versions of the procedure.
- Review of previous comments submitted against the procedure.
- Review of the latest system requirements or features expected to be addressed in the procedure, including launch criticality’s, interdependencies, and development/delivery status.
- Review of the latest test-to-requirement mapping information. Information regarding the latest system features, requirements and their mapping to test cases is maintained as part of the ECS Verification Database, which is accessible on the World Wide Web at this URL:

http://ecsv.gsfc.nasa.gov/ecsv_v2/reports/standard/index.cgi

Step 3: Procedure review and comment.

This step begins with the ECS contractor notifying the team of ESDIS reviewers by electronic mail (email) messages that specific test procedures are available for review. The procedures are posted to an ECS web site at the following URL for convenient access by the ESDIS review team:

http://dmsserver.gsfc.nasa.gov/relb_it/relbit.htm

Reviewers then download the procedures they are assigned to review. The review process then includes scrutiny of the following areas of the procedure:

- Test objectives
- Test set-up, test data, test steps, expected results, post test data analysis
- Proper mapping of the test to requirements/features verification criteria

- Requirement/feature verification criteria coverage (i.e., ensure that the test will be sufficient to verify mapped requirements/features verification criteria).

During the review, each reviewer completes an ESDIS test procedure review form (see attachment A), which provides a location for all comments to be recorded in a uniform, organized fashion. The review form includes direction on grading levels for specific key areas of a test procedure.

Step 4: Comment consolidation and submission.

Once all comments on a test procedure are captured on a review form, the review team members forward the forms to the SSDO System Engineer and the SSDO Development Lead responsible for the effected test. These individuals then review and consolidate the comments into a more concise, focused package relative to their respective subsystem(s). This set of comments is then forwarded to the SSDO System Engineer to ensure technical consistency. The final, official package of ESDIS comments is then delivered to the ECS contractor for review and action. If necessary, meetings are conducted between ESDIS and the ECS contractor to resolve any issues and to determine a reasonable schedule for comment implementation.

The “turn-around” time for the ESDIS review and delivery of comments back to the ECS contractor is typically 3 days for draft procedures and one day for final procedures, depending on the test, and the schedule priorities in effect at the time the test procedure is reviewed.

For those procedures that are reviewed and found acceptable, the following step (step 5) is disregarded, and approval actions as described in step 6 are initiated immediately.

Step 5: Review of revised procedures.

As test procedures are revised in response to the ESDIS comments submitted, these documents are again subjected to the review process, beginning with step 1 above. The revised, and often “final” version of test procedures are posted to the aforementioned web site, and email notification is sent to ESDIS by the ECS contractor. The SSDO Systems Engineer or the Deputy SSDO Manager is the key player in this step, reviewing the previous comments on the procedure, and the revisions made by the ECS contractor to adjudicate the comments. Typically, this round of reviews is less time consuming since each additional review is more focused on specific issues rather than the entire test document. Once a procedure is reviewed with no further revisions needed, then approval actions are initiated as described in step 6.

Step 6: Final approval.

For those procedures that are reviewed and found acceptable, the SSDO Systems Engineer or the Deputy SSDO Manager declares the procedure to be approved by ESDIS, and sends an email message to the ECS contractor’s test management personnel which lists the specific procedures that have been approved.

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CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	4/26/1999	Initial Release
A	2/17/2000	Web site URL's updated; process for test schedule review removed. Minor changes to review process steps 1, 2, and 6. Changed title to "Review and Approval of ECS Test Procedures"